

Gray whales - current status and strandings

by Doreen Moser and Frances Gulland

As winter begins here in California, so does the annual gray whale (*Eschrichtius robustus*) migration. In November, the whales begin their 5,000-mile journey southward from Alaska's Bering and Chukchi Seas. During December and January thousands of these whales are seen migrating along our coast. By January, pregnant females are first to reach the calving lagoons along the West coast of Baja California, Mexico. Soon they are joined by the other adults and juveniles. The females give birth to their calves in the lagoons, usually for the first time when eight years old. In February, the animals begin another 5,000 mile journey northward returning to Alaska. During the spring months, cow-calf pairs can be seen migrating very close to shore. These 15-foot calves nurse constantly, as they migrate back to the summer feeding grounds.



As you stand along the shore, how do you know you are looking at a gray whale? You can usually spot them by their heart-shaped blow. They surface regularly every three to five minutes when migrating, and usually blow three to five times. They swim between 7 and 9 kms per hour. Gray whales are medium sized whales, reaching up to 45 feet in length and weighing 45 tons. As in other baleen whales, females are larger than the males. Gray whales can be distinguished from other whales because they lack a dorsal (back) fin. Instead, they have a low hump and a series of six to twelve knuckles or bumps. They are gray with white patches, which mostly consist of areas where barnacles and lice have attached themselves to the whales. With over 400 pounds of barnacles and whale lice, they have the heaviest load of ectoparasites than any other animal.

Gray whales have one of the longest migrations of any mammal. Why these animals travel thousands of miles from the Arctic to those particular Baja lagoons is unclear. It has been speculated that the lagoons offer warm calm waters for calving and protection from predation by killer whales (*Orcinus orca*). The Arctic waters offer a high density of food on which they feed all summer long. Gray whales feed differently from other baleen whales. They feed in shallow coastal areas, sucking up bottom-dwelling animals, mostly amphipods (which are related to shrimp). They need to gain a tremendous amount of weight to sustain them on their 10,000-mile journey. Most whales do not feed during the migration, although some whales have been known to "snack" along the way. Additionally, some juvenile gray whales do not make the entire migration. Some spend their summers here in California, feeding near the Farallon Islands and off Point Reyes.

Because the gray whale migrates so close to shore, this offers a great opportunity for whale watchers and researchers. The best time for gray whale watching is December through Febru

ary for the southern migration and March to May for the northern migration. You can observe them by boat or even from points of land, such as Point Reyes National Seashore or Point Bonita in the Marin Headlands. In recent years, there have been increased sightings of gray

whales in San Francisco Bay. Annually, National Marine Fisheries Service conducts a gray whale survey from Yankee Point, North of Big Sur. Using spotting scopes and night scopes, researchers count the animals as they migrate past the shore day and night. Their most recent estimate of the gray whale population is 26,635.

Gray whales have not always been so numerous. In fact, they have returned from the brink of extinction twice in the last 200 years. In the late 1800s, the gray whale breeding grounds were discovered, and whalers killed a large percentage of the population. The drop in population made it no longer profitable to hunt gray whales; they were left alone and their numbers recovered. However, the early 1900s brought the invention of factory ships, which processed whales aboard the vessels. This new technology allowed intensive hunting of the grays once again, and their population dropped dangerously to probably fewer than 2,000 individuals. Protection finally came in 1946 through an international agreement to stop hunting them. Since that time, the population has grown to what it was before modern-day whaling. As a result of this population recovery, gray whales were removed from the U.S. Endangered Species List in 1994, although this de-listing was controversial.

In the past two years, we have seen an increased number of gray whale strandings throughout their migration route. Typically, nine to sixteen gray whales a year are found dead in California, usually during the northward migration of these animals from their breeding grounds in Mexico to their summer feeding grounds in Alaska (data are compiled by the National Marine Fisheries Service stranding coordinator for California, Mr. J. Cordaro). Between January 1 and October 1 1999, 269 gray whale strandings were documented along the Pacific coast of North America and Mexico. The highest number of strandings was reported along the coastline of Mexico (118), with Alaska (72) reporting the second highest number. In California, 47 whales stranded. Stranded animals were of both sexes and all ages. Numbers appear to be even higher in 2000. About 300 gray whales stranded from Mexico to Alaska, with 58 in California. What was particularly unusual about the strandings in the year 2000 was a cluster of 19 dead whales observed in San Francisco Bay.



As many of these whales were decomposed when first observed, their cause of death could not be determined. Most of the strandings in Mexico and Alaska were discovered by aerial surveys, and therefore close examination was difficult, if not impossible. In other areas, tissues have been collected for toxicological analyses and nutritional assessment, as well as for studies on genetics and stress. Food samples were also collected from the gastrointestinal tract. This food is interesting, as it shows that some

of the whales had been feeding during the northward migration, which is not typical for this species (see above).

The body condition of most of the stranded whales appears to be poor. However, we do not yet know whether the deaths are due directly due to food shortage, or as a result of an infectious disease causing animals to lose weight. If the whales are starving, one possibility is that this starvation is as a result of El Niño. Another is that it is a consequence of changes in Arctic ice distribution, a third is that this a normal oscillation of prey resources, although a long-term benthic change in the Bering Sea is also possible. Alternatively, the gray whale population could have outgrown its food resources, and we could be seeing stranding numbers that are reflective of an increased population that has reached their carrying capacity. To distinguish between these hypotheses, more information is needed. Increased monitoring of migrating whales, and examination of dead stranded whales will continue in 2001, with efforts by a large number of organizations and volunteers coordinated by the National Marine Fisheries Service. If you see a dead whale in San Francisco Bay, you can help by calling 415-289-7350, with as much information on its location as possible.



In conclusion, the cause of the increased number of stranded gray whales in 1999 and 2000 remains unknown. Continued collaborative efforts to examine both stranded whales and healthy migrating animals are needed to understand what is happening to this charismatic animal of interest to many Californians.

Doreen has been the Assistant Director of Education at The Marine Mammal Center for over five years, teaching marine science to children and adults. Additionally, she works as a naturalist for Oceanic Society, leading whale watch expeditions throughout North America. She obtained her Master's in Marine Science at Moss Landing Marine Labs. Through her research and education, she has been able to share marine mammal research to people of all ages.

Frances is Director of Veterinary Science at The Marine Mammal Center, where she has worked for six years with stranded marine mammals. Her interest is in diseases of wild animals, and how they are influenced by human activities. She obtained both her veterinary degree and Ph.D. from Cambridge University, in the United Kingdom.